



Whitman's Pond Association

March 30, 2012

Kathleen Baskin. P.E.
Director of Water Policy
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, 9th Floor
Boston, MA 02114
email: Kathleen.Baskin@state.ma.us

Re: Public Comments – SWMI Framework

Dear Ms. Baskin:

Who We Are

The Whitman's Pond Association is a volunteer 501 (c) 3 organization whose purpose is to: i) unify the community interest in Whitman's Pond; ii) promote a better understanding of the aesthetic and environmental issues facing the pond, while addressing public concerns for the pond's future; and iii) act as a liaison between concerned residents and government. Whitman's Pond provides both a recreational and ecological environment that is vital to both the Town of Weymouth and the Greater Boston Harbor ecology. It is imperative that collaboration and cooperation exist between all agencies having jurisdiction over Whitman's Pond and establishing a Safe Yield that is environmentally conducive to the migratory species that rely on Whitman's Pond is essential to the sustainability of the ecosystem of Whitman's Pond, the Back River and the Greater Boston Harbor Habitat.

Recreation on Whitman's Pond

Whitman's Pond, in a densely populated suburban area, provides a variety of recreational activities year round including boating, fishing, ice skating, and cross country skiing. The recreational opportunities Whitman's Pond provides are vital to the community.

The Whitman's Pond Association in conjunction with the Massachusetts Fisheries and Wildlife holds an Annual Fishing Festival as part of their Angler Education Program that serves as an opportunity for community members to learn about the fish in Massachusetts waters, safety, and ethics. Additionally, the Coast Guard Auxiliary presents safe paddling information that encourages boaters to wear life jackets while on the water. Pictures of events on Whitman's Pond can be viewed at our website at www.whitmanspond.com.

Area of Critical Environmental Concern

Weymouth, along with Massachusetts DEP and the Division of Fisheries and Wildlife, is responsible for the stewardship of one of the largest viable, productive herring runs on the East Coast whose biggest threat is drawdown of Whitman's Pond. With herring being a keystone fish, the spawning habitat provided by Whitman's Pond and Old Swamp River is crucial to the overall health, viability and sustainability of the Greater Boston Harbor ecosystem and the fishing industry that relies on keystone fish.



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The Massachusetts Division of Fisheries and Wildlife has noted the Back River as an Area of Critical Environmental Concern and all of Whitman's Pond, Great Pond and parts of its watershed are listed as Core Habitat and Critical Natural Landscapes. All studies of Whitman's Pond and recommendations for its management include reducing pond level variation.

A Note About Whitman's Pond

Whitman's Pond is comprised of the main basin, the west cove and the south cove with a sluice gate between the south cove and the main basin. Below are two pictures that show how Washington Street goes over Whitman's Pond at a narrow point of the pond between the main basin and south cove. The south cove of Whitman's Pond is a contiguous portion of Whitman's Pond, not a separate basin, and a source for the perennial flow required for the herring run in Jackson Square.

Whitman's Pond – south cove – Washington Street goes over Whitman's Pond between the main basin and the south cove. Washington Street is on the right. The picture below shows the sluice gate.



Whitman's Pond - main basin - Washington Street on the left.





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Storage Capacity

From a report titled, "Weymouth Water Supply and Regulatory Review", which was produced with support from the EPA by E2, Inc, now Skeo Solutions, to look at the effect of the development of the former South Weymouth Naval Air Station on Weymouth's water supply:

According to the Weymouth Safe Yield Study, Great Pond has a usable volume of 1,103 million gallons (mg) of water. However, this volume is supplemented by pumping additional water from the southern portion of Whitman's Pond, referred to in the Weymouth Safe Yield Study and Firm Yield Approval as South Cove. South Cove has a usable storage volume of 36 mg. The Weymouth Safe Yield Study clarifies that Whitman's Pond is considered an emergency water supply source for the Town of Weymouth. However, MassDEP's Firm Yield Approval considered Whitman's Pond as having no usage storage volume and did not consider the Whitman's Pond water as available for inter-reservoir transfer.

The Weymouth Safe Yield Study assumes that water transferred from South Cove to Great Pond does not affect the volume of water in Whitman's Pond. It appears that there are no current regulations to prevent the withdrawal of water from Whitman's Pond when water is pumped from South Cove.

With the south cove of Whitman's Pond being a contiguous part of Whitman's Pond, the perennial flow out of the south cove into the main body is vital to maintain stream flow requirements that support the herring run. The south cove of Whitman's Pond is not a separate basin.

Minimum Stream Flow Permit Conditions

Also from the report:

The region's hydrology and the sensitivity of the Weymouth Herring Run require restrictive conditions in the Winter Street Well # 1 permit in order to protect the valuable fishery resource from possible pumping impacts. The Winter Street Well #1 is linked to ground water that draws water from the Weymouth/Weir Sub-basin including the Back River, which is critical for the Herring Run. Permit conditions establish minimum downstream flow rates on a seasonal basis in order to allow for upstream migration of herring that spawn in Whitman's Pond. Minimum stream flow levels required to support marine fisheries are established for the Weymouth/Weir Sub-basin of the Boston Harbor Watershed by the Massachusetts Water Resources Commission (MWRC).

The minimum stream flow conditions for the Herring Run are established for a permitted ground water well. Water levels in Whitman's Pond that supply the stream flow for the Herring Run are not subject to these permit conditions because Whitman's Pond is a registered surface water source, rather than a permitted source. The Registration Statement that regulates water withdrawals from Whitman's Pond does not include minimum stream-flow conditions.



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There are environmental concerns that the lack of an enforceable permit condition allows Whitman's Pond to be drawn down regardless of minimum stream flow restrictions. In 2010 a drawdown situation occurred that prevented stream flow stranding herring fry in the ladders while going out of Whitman's Pond. Restrictions need to take a systemic approach to water withdrawals from sources affecting the stream flow out of Whitman's Pond.

Current Usage and Approved Withdrawals

Also from the report, Weymouth has withdrawn an average of 4.17 mgpd from 2000 – 2009 from current water sources. Weymouth's MassDEP-approved water withdrawals total 5.0 mgd, including both registered and permitted volumes.

The Registered Sources Registration Statement notes Old Swamp River/South Cove as a separate water source when accurately it is a contiguous portion of Whitman's Pond and the perennial flow required for the herring run in Jackson Square.

Table 1. WMA Regulated Sources and Withdrawal Volumes for Town of Weymouth

<i>Withdrawal Type</i>	<i>Source</i>	<i>Average Volume per Day</i>
Registered Sources		4.51 mgd
Registered Sources (Registration Statement #3-19- 336.01)	Great Pond (4336000-01S) Old Swamp River/South Cove (4336000-02S) Whitman's Pond (4336000- 03S) Circuit Avenue Well (4336000-01G) Main Street Well (4336000- 02G) Libbey Park, also called Whitman's Pond Well (4336000-03G) Winter Street Well #2 (4336000-05G)	
Permitted Sources (WMA Section 7 Permit # 9P2-3-19- 336.02)	Winter Street Well #1 (4336000-04G)	0.49 mgd

Availability Calculations and Withdrawal Concerns

With the average 4.17 mgpd and Weymouth's current agreement to supply an additional 245,000 gpd to South Shore Tri Town for the development of Phase 1 of the former South Weymouth Naval Air Station, Weymouth is left with 585,000 gpd. Taking into account the standard 10% for system leaks and fire department usage, Weymouth has 168,000 for any further town development or emergencies, man made or natural.



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Currently Weymouth provides only approximately 20% of the contractually obligated 245,000 gpd to the development on the former South Weymouth Naval Air Station.

The pictorial documentation of Whitman's Pond below shows the effects of increasing water demands over the long term. The environmental damage to Whitman's Pond is a clear example of why the determination of Safe Yield needs to include environmental protection factors and hydrologic factors as stated in the Safe Yield Clarification Statement.

Based on the nature of the WMA's regulations, approximately 90 percent of Weymouth's allowable water withdrawals (4.51 mgd) are allocated through the current Registration Statement. Approximately 10 percent of current allowable water withdrawals (0.49 mgd) are allocated through a WMA permit.

WMA regulations allow for the town to withdraw up to 4.51 mgd from any single source or a combination of sources listed under the Registration Statement.

Currently, there are no MassDEP regulations in place preventing the Town of Weymouth from making continual water withdrawals from Whitman's Pond, provided that withdrawals don't exceed an average daily volume of 4.51 mgd.

Pictorial Documentation of Whitman's Pond

Pictorial documentation below shows the deterioration of the west cove of Whitman's Pond. The increase in water demand and changes in hydrology have all but dried up the west cove of Whitman's Pond to such an extent the water depth is at best a few feet.

Whitman's Pond – west cove - from West Lake Drive in 1958 – the property was waterfront property



Whitman's Pond Association - 15 Woodbine Road, Weymouth, MA 02189



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Whitman's Pond – west cove – from West Lake Drive - 1994 –the property is swamp front property



Whitman's Pond – west cove – from West Lake Drive – 2012 – with the trees growing where there used to be water, this is not waterfront property anymore.





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The pictorial documentation below of the south cove of Whitman's Pond shows the varying pond level and how the varying pond level results in vegetation growth that reduces the storage capacity. This reduction of storage capacity over the years begs the question, are the safe yield calculations valid when a permit is in force for twenty years. The SWMI framework proposes safe yield that is 2.5 mgd (13%) higher than current usage in the Weymouth & Weir basin. How can this be reconciled with DEP's Clarification of Safe Yield which says Safe Yield includes environmental protection factors?

Whitman's Pond - south cove - 2007



Whitman's Pond – south cove - 2008





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Whitman's Pond - south cove - 2010



Points on SWMI Framework and Comments

There are a number of points in the SWMI Framework Summary that are of particular concern to the members of the Whitman's Pond Association.

1) Calculating safe yield based on availability of water in summer months, as opposed to a yearly average would be a more accurate way to ensure that an environmentally protective safe yield is established, particularly in an area of critical environmental concern. Weymouth has a watershed that, first and foremost, requires protection to prevent further degradation.

The Status Report of Weymouth's Back River Herring Run prepared in January 2012 (appended below) notes competing interests for the spawning habitat include water supply. Additionally, it notes, the Herring Run is reasonably healthy and productive considering its location, but continuing decline of Whitman's Pond will substantially impact the productivity of the herring run. Increasing the baseline for Safe Yield by 5% will further expedite the deterioration of Whitman's Pond

2) Data was not collected for environments along the coast where migratory fish return to spawn and data sets stop short of the 2010 drought conditions. The winter of 2011-2012 was one of the warmest winters on record and weather predictions for this summer are saying drought and heat. As of April 3, 2012, the discharge out of Whitman's Pond is down to 5 cfs and typically rates are at 25 – 35 cfs. All the herring have not migrated into the Pond yet this season.

Minimum stream flow levels required to support marine fisheries are established for the Weymouth/Weir Sub-basin of the Boston Harbor Watershed by the Massachusetts Water Resources Commission (MWRC).and are summarized below.



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Pumping restrictions and minimum stream flow levels

<i>Dates</i>	<i>Stream Flow Requirements</i>
Year round	0.15 cubic feet per second per square mile (cfsm)
Mar 1– May 31	2.4 cfsm

Discharge rates as low as 3.5 cfs are barely adequate for herring fry to leave the Pond, but far from sufficient for the herring to get up to the Pond. With drought conditions predicted, low flow conditions will affect the herring fry's ability to leave the pond. Harsh conditions year after year can interfere with spawning and eventually extinguish a migratory fish population. Determination of safe yield withdrawal limits that do not allow enough flow in summer for herring fry to return to the ocean, or do not allow for sufficient flow for fish to go up the ladders during years of abnormally low winter precipitation, do not live up to DEP's Statement of Clarification of Safe Yield.

Below is a picture of the Iron Hill Dam outflow taken beginning of April 2012. Notice the very low flow to the right of the ladders.



3) The rapid deterioration of the west cove and the south cove of Whitman's Pond clearly illustrates that the current withdrawals out of Weymouth's watershed exceed environmentally safe yields and current calculations of water availability. Additionally, eutrophication is exponential, not linear and Whitman's Pond is in a hypereutrophic state. As such, varying pond levels by withdrawing too much water, not only reduces storage capacity in the long term, that is not included in storage calculations, but also will have a substantial impact on the productivity of the Herring Run as water quality diminishes.



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Currently the Approved Yield of Weymouth ground and surface water sources are noted at 6.27 mgd with an Allowable Withdrawal of 5.0 mgd. Weymouth currently withdraws 4.17 mgd, on average years 2000 – 2009, and is contractually obligated to provide an additional 200,000 gpd. Taking into account a 10% Fire Usage and system leak allowance and the additional 5% added to calculate baseline per the draft framework, it is difficult to see how Weymouth's watershed can provide this water in light of the pictorial documentation taken in the years after the dataset used for the framework.

4) New WMA water permits will last for another twenty years. The proposed SWMI framework would allow backsliding, and would not support the long-term viability of Weymouth's watershed in light of the new baseline calculations incorporating an additional 5%. Increasing the allowable withdrawal in an Area of Critical Environmental Concern by 5% in a watershed that is already suffering from excessive withdrawals with documented evidence of spawning habitat destruction runs contrary to the goal of SWMI to provide sustainable water management.

In Conclusion

The Whitman's Pond Association looks to state authorities to review current water withdrawals and limit water withdrawals to amounts that are compatible with public enjoyment and the ecological health of our local water resources. Setting safe yield higher than current withdrawals in Weymouth, which are obviously and seriously degrading Whitman's Pond, is unacceptable. We also propose that determination of safe yield, including the factors noted in the MassDEP Statement of Clarification of Safe Yield be delegated to an objective third party such as USGS and watersheds in Areas of Critical Environmental Concern be specifically reviewed. Only with credible and protective safe yield limits will other SWMI provisions be taken seriously.

The Whitman's Pond Association appreciates all the effort that has been put forward by the various agencies and entities. Obstruction to the fish passages are a function of low flow. The health and productivity of the fish runs on the Back River, which rely on water quality and quantity, are a function of an environmentally protective determination of Safe Yield and Allowable Withdrawal aligned with the MassDEP Statement of Clarification of Safe Yield. We thank you for this opportunity to comment.

Sincerely,

Tricia Pries
President
Whitman's Pond Association



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Notes on Status of Weymouth Back River Herring Run

Prepared January 2012

Compiled by:

Scott Dowd (Weymouth Conservation Commission)

George Loring (Herring Warden; Chairman, Weymouth Conservation Commission)

Mary Ellen Schloss (Weymouth Conservation Administrator)

The Weymouth Back River herring run is one of the most productive in Massachusetts. Since 1986, herring run counts in the Back River have ranged from 65,800 in 1998 to 859,000 in 1995. The average count during this 26-year period was 276,331, with a median of 239,850. The high average is driven by several peak years (1990, 1991, 1992, 1995) in which counts were above 400,000. Counts have not exceeded 400,000 since 1995. In the past ten years (2002 – 2011), counts have been below the 26-year average for each year except one (2002), and have been below the 26-year median in all years except three (2002, 2003, 2008).

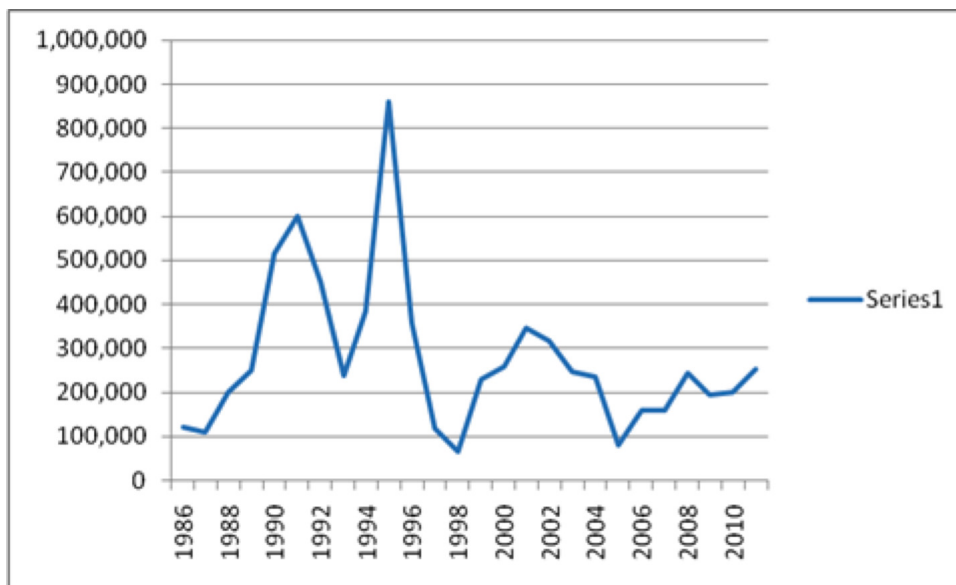


Table 1 Back River Herring run annual fish counts

Obstructions to fish passage are not a major concern in the Back River run. We are lucky to have committed Herring Wardens, volunteers, and town government that work together to ensure that the river is passable for migrating adults and juveniles.

The major concerns for the Back River herring run are related to conditions in the spawning grounds and migratory corridor. The area is heavily urbanized and the pond and river suffer from degraded water quality typical of urbanized areas. Whitman's Pond, the spawning ground, is hypereutrophic, with high nutrient levels, low dissolved oxygen levels, and a serious infestation of invasive and nuisance vegetation which adversely affects water quality and habitat.



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Competing uses for the spawning pond include recreation (boating and fishing) and an active water supply.

There are concerns that the degraded conditions in the spawning pond may decrease productivity and annual yield. Poor environmental conditions can have a negative impact on the final stages of egg and sperm formation in broodstock that are under stress. These stressors will likely result in a decreased fertilization rate, and smaller, less robust larvae. The continuing decline of the conditions in Whitman's Pond are likely to have a substantial impact on annual production.

Although the herring run migration numbers remain reasonably healthy at this time, the degradation of the spawning ground could severely compromise the population if trends are not reversed. The future health of the run may well be determined by the ability to properly manage the complex threats to and competing uses for the pond.

The Town of Weymouth is working with local stakeholders as well as specialists in the field of pond restoration to develop a detailed plan to restore Whitman's Pond to a healthy state and maximize river herring productivity.